Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

1.(currently amended) A process for producing an ene reaction product comprising thermally reacting at a temperature above about 180°C, and ~~in the substantial absence of~~ without halogen assistance, polymer consisting of polyalkene selected from the group consisting of polyisobutene, polybutene and mixtures thereof, having a number average molecular weight (Mn) of from about 300 to about 5000, and a terminal vinylidene content of at least 30%, and an enophile, in the presence of from about 10, to about 3000 ppm by weight, based on the weight polyalkene, of free radical inhibitor comprising a phenothiazine nucleus.

2.(original) The process of claim 1, wherein said polyalkene has a terminal vinylidene content of at least about 50%.

3.(previously presented) The process of claim 1, wherein the reacting group of said enophile is olefinic or carbonyl.

4.(previously presented) The process of claim 1, wherein said polyalkene has a M_n of from about 900 to about 2500, and said enophile is maleic anhydride (MA).

5.(cancelled)

6.(previously presentd) The process of claim 4, wherein said free radical inhibitor comprises unsubstituted phenothiazine.

7.(previously presented) The process of claim 4, wherein the MA and the polyalkene are reacted in a molar ratio (MA:polyalkene) of from about 0.9 to about 3:1.

8.(original) The process of claim 7, wherein said ene reaction product has a functionality of from about 1 to about 2.

9.(original) The process of claim 8, wherein said ene reaction product has a functionality of from about 1.3 to about 1.7.

10.(previously presented) The process of claim 5, wherein the reaction is conducted in the further presence of from about 10 to about 2000 ppm by weight, based on the weight of the polyalkene, of an oil soluble sulfonic acid.

11.(previously presented) The process of claim 10, wherein at least 50 wt.% of the sulfonic acid is introduced after at least 50% of the polyalkene has reacted with the MA.

12.(currently amended) A process for producing an ene reaction product comprising thermally reacting at a temperature above about 180°C, and ~~in the substantial absence of~~ without halogen assistance, polymer comprising polyalkene selected from the group consisting of polyisobutene, polybutene and mixtures thereof, having a number average molecular weight (Mn) of from about 900 to about 2500, and a terminal vinylidene content of at least 30%, and maleic anhydride (MA), in the presence of from about 10, to about 3000 ppm by weight, based on the weight polyalkene, of free radical inhibitor comprising a phenothiazine nucleus, wherein the reaction is conducted at a temperature of from about 180 to about 260°C, and under a pressure of from about 0 to about 1000 kPa, and said MA is contacted with said polyalkene such that an initial charge of MA is contacted with the polyalkene at or prior to the beginning of the reaction, and one or more additional charges of MA are introduced into the resulting reaction mixture subsequent to the beginning of the reaction.

13.(currently amended) A process for producing an ene reaction product comprising thermally reacting at a temperature above about 180°C, and ~~in the substantial absence of~~ without halogen assistance, polymer comprising polyalkene selected from the group consisting of polyisobutene, polybutene and mixtures thereof, having a number average molecular weight (Mn) of from about 900 to about 2500, and a terminal vinylidene content of at least 30%, and maleic anhydride (MA), in the presence of from about 10, to about 3000 ppm by weight, based on the weight polyalkene, of free radical inhibitor comprising a phenothiazine nucleus, comprising the additional steps of:

(a) cooling the reaction mixture to below 200°C after completion of the reaction;

(b) introducing an additional amount of from about 1 to about 10 wt. %, based on the weight of the reaction mixture, MA into the reaction mixture and stirring for a period of from about 0.5 to about 6 hours;

(c) stripping the reaction mixture of excess MA;

(d) adding a hydrocarbon solvent; and

(e) filtering the reaction mixture.

14.(original) The process of claim 4, further comprising reacting the ene reaction product with a nucleophilic reactant.

15.(original) The process of claim 14, wherein said nucleophilic reactant is selected from the group consisting of amine, alcohol, amino-alcohol, metal compound, and mixtures thereof.

16.(original) The process of claim 15, wherein said nucleophilic reactant is a polyamine.

17.(original) The process of claim 14, wherein the reaction product is reacted with the nucleophilic reactant in diluent oil that is at least substantially free from sulfur.